

Pollution Prevention Plan

Facility Name: **Alaskan Copper Works**

Industry Type: **Fabricated Pipe and Pipe Fitting Manufacturing**

NAIC Code: **332996**

EPA ID# or CRK#: **WAD980738546**

Base Year: **2006**

Description of Products and Services

Full service center and manufacturer of corrosion-resistant alloy products.

Production Level

Units	2006	2007	2008	2009	2010	2011
Lbs of material processed	29,210,133	31,230,000	10,421,732	5,309,242	4,630,468	0
Ratio	1.00	1.07	0.36	0.18	0.16	0.00

Previous Accomplishments

Metal Fab Processing

2007-2010

Chrome slag toxicity reduction: Chrome slag generated from plasma table cutting processing was subjected to an on-site pilot test program started in mid 2007 with actual on site hazardous characteristics reduction treatment occurring in early 2008 resulting in 100% chrome slag toxicity reduction. For the calendar year of 2008, dangerous waste reduction occurred under treatment by generator provisions but still had to be reported due to treatment outside of process and lack of local recycling disposition outlets. For 2009, treatment was conducted within the process so that no dangerous waste generation occurred from this process. In December 2010, Alaskan Copper requested approval from the Department of Ecology to exempt the metal slag generated from plasma table cutting activities from dangerous waste requirements because it is a characteristic by-product that is reclaimed. (In January 2011, Ecology granted this approval, and as long as the the metal slag material is managed as a by-product and fully reclaimed, it is no longer considered a solid waste or a dangerous waste.)

Pipe Painting

2002-2010

Opportunity originally identified in 2001 by using smaller amounts of solvents to clean parts; only using what is needed subject to fluctuating annual production demand. An estimated 61% total solvent use reduction established at end of 2002. Currently only small amounts of solvent in the form of spray marking paints, dyes, and parts cleaning solvents are purchased and use as needed keeping hazardous materials inventory to a minimum. All used solvents and spray cans are dispensed, containerized, and added for off-site solvent fuels program.

Materials account/management

2002-2010

Initially started in 2002, material purchasing tracking by accounting helps to account for all material purchased and combined with the annual waste report provides a complete use and disposal tracking mechanism to view overall hazardous material control throughout all portions of manufacturing.

Pollution Prevention Training

- New employee orientation training is provided to employees emphasizing the company environmental policy, hazardous materials and waste management procedures, pollution prevention techniques and goals, and emergency response training.
- Annual employee refresher training highlighting proper hazardous materials handling, use and storage, waste reduction assessment techniques, proper waste management procedures and related subjects, pollution prevention principles, and company environmental policies and management systems.
- Waste management issues are addressed during safety meetings.
- Open-door policy regarding safety and environmental concerns to their supervisors, who in turn bring these concerns to the Operations Manager for review and implementation.
- Promotion of employee involvement in environmentally friendly practices.
- Contracting outside environmental management firm to assist in pollution prevention planning and provide new technologies for waste reduction or product substitution.
- Beginning in 2008, additional stormwater management training has been incorporated into the new hire and annual refresher training program.

Employee Involvement

Operations Manager (James Brown): In charge of overall P2 Plan; coordinates management policies, project support, technical and economic evaluations; implements pollution prevention in all areas of the facility; ensures design modifications are made to reduce pollution impact.

Plan Contact: James Brown, Operations Manager; Jerry Thompson (Environmental)

Cost Accounting

Currently, environmental costs are placed into the category of overhead. Our accounting system has been identified as an opportunity to track costs more easily and will be assessed in the near future.

Five-Year Numeric Performance Goals

Goals for the 5-year life of this plan.	2007	2008	2009	2010	2011
Hazardous Substance Use Reduction (lbs)	100	100	100	1,000	1,000
Hazardous Waste Reduction (lbs)	25,000	26,000	32,000	28,000	12,000
Hazardous Waste Recycling (lbs)	25,000	26,000	32,000	2,000	2,000
On-site Hazardous Waste Treatment (lbs)	25,000	26,000	32,000	24,000	12,000
Wastewater Reduction (gal)					
Energy Conservation (kWh)					
Cost Savings (\$)					
Air Emissions Reduction (lbs)					
Solid Waste Reduction (lbs)					
CO2 Emissions Reduction (lbs)					

Non-Numeric Performance Goals

Hazardous waste reduction has been achieved by better waste dewatering processing and implementation of specific wastestream on-site treatment and process waste neutralization. As a result of new treatment technologies, hazardous waste recycling goals will adjust proportionally since generated hazardous waste will be rendered non-hazardous with resulting waste shipped for recycling or beneficial use. There should be no increase in volume of water use as a result on-site treatment and neutralization. Additionally, Ecology's approval of metal slag material being managed as a characteristic by-product (refer to Metal Fab Processing section under Previous Accomplishments) should greatly assist with achieving waste reduction goals.

Management Policy

Establishing and maintaining environmental policies that promote better hazardous material and waste handling and a safer workplace will continue to be a paramount priority. Since the introduction of an independent environmental consultant, we have increased our understanding and have addressed a number of hazardous material/waste management issues in the workplace and will continue to improve on our overall environmental compliance. Our organization is committed to the purpose of this plan and hereby submits it to the Department of Ecology.

James Brown
Operations Manager 9/1/2011

Processes and Opportunities

Process	Opportunity
Metal Fab Processing GoTo	Chrome slag toxicity reduction GoTo Enter New Opportunity Name
Pipe Painting GoTo	Ship paint waste to off-site recycling facility GoTo Continuing employee training to conserve use of solvents GoTo Incorporate the use of less toxic or biodegradable paints and dyes GoTo Enter New Opportunity Name
Passivating Process	Application of spray rinse and vapor controls to reduce evaporation and nitric acid use GoTo Enter New Opportunity Name
Materials accounting/mgmt	Product tracking and accounting GoTo Enter New Opportunity Name
Enter New Process Name	

Process	Metal Fab Processing GoTo
<p>DESCRIPTION: Stainless steel sheet and plate products are used to produce pipe fittings. Sheets are tolled into pipe which are welded, x-rayed, inspected, passivated (explained on separate process description form), and shipped.</p> <p>RESEARCH:</p> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Magazines/journals <input type="checkbox"/> Conferences <input checked="" type="checkbox"/> Vendors <input type="checkbox"/> Internet searches <input checked="" type="checkbox"/> Industry sources <input type="checkbox"/> Employee suggestions <input checked="" type="checkbox"/> Government staff <input type="checkbox"/> Other </div> <div> <p>Name(s): Which ones? Name(s): Clean Harbors Environmental Services Results: Who? Environmental, Compliance & Remediation, Inc (waste reduction & recycling ideas) Who & what? Who & which agency? Department of Ecology Explain:</p> </div> </div>	

HAZARDOUS SUBSTANCES USED (LBS)								
Product Name	Ingredients		2006	2007	2008	2009	2010	2011
Stainless Steel	CAS #	%						
	N450	2						
	MANGANESE CMPNDS	18	23,717,073	23,802	3,396,998	1,634,721	1,431,438	
	N090	12						
	CHROMIUM CMPNDS							
	N495							
	NICKEL CMPNDS							

HAZARDOUS WASTES GENERATED						
Waste (LBS)			2006	2007	2008	2009
Plasma cutting cleanout sludge			55,990	62,486	23,210	0

TREATMENT, RECYCLING, RELEASES OR OTHER RESOURCES USED						
Resource or Release (LBS)	2006	2007	2008	2009	2010	2011
Treated plasma cutting cleanout sludge via TBG requirements	0	0	46,420	12,050	23,890	

Opportunity Chrome slag toxicity reduction

Describe the opportunity: Implementation of new technology to reduce chrome waste toxicity prior to waste generation and rescheduling of stainless steel cutting to reduce overall waste generation.

Targeted Hazardous Products/Wastes: Cutting table waste slag

Observations:

Year	Observations
2007	2007 did afford an opportunity to put bench testing of chrome slag treatment into actual use. Testing did show chrome passing TCLP. Outlets for treated non-hazardous slag waste are very limited.
2008	Treated successfully and economically almost 2/3 of hazardous waste generated.
2009	Treated successfully and economically all cutting table waste slag generated.
2010	Treated successfully and economically all cutting table waste slag generated. In December 2010, Alaskan Copper requested approval from the Department of Ecology to exempt the metal slag generated from plasma table cutting activities from dangerous waste requirements because it is a characteristic by-product that is reclaimed. (In January 2011, Ecology granted this approval, and as long as the the metal slag material is managed as a by-product and fully reclaimed, it is no longer considered a solid waste or a dangerous waste.)

2011

What are the estimated annual environmental effects of this opportunity? [Help](#)

Hazardous Substance Use Reduction (lbs) 203,283	Wastewater Reduction (gal) 0
Hazardous Waste Reduction (lbs) 23,210	Energy Conservation (kWh) 0
Recycling of Hazardous Waste (lbs) 0	Cost Savings (\$) 11,945
Treatment of Hazardous Waste (lbs) 23,890	Air Emissions Reduction (lbs) 0
Solid Waste Reduction (lbs) 0	CO2 Emissions Reduction (lbs) 0
Other Effects	

Feasibility: [Help](#)

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: [Help](#)

- ☒ Selected for implementation. When? December 2007
☐ Scheduled for further study. When will the study be complete?
☐ Rejected. Why?

What problems will there be implementing this? Space

Process	Pipe Painting
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DESCRIPTION: Pipe painting occurs at various production locations requiring the use of spray

paints, coatings, and solvents.

RESEARCH:

- ☐ Magazines/journals
☐ Conferences
☒ Vendors
☐ Internet searches
☒ Industry sources
☐ Employee suggestions
☐ Government staff
☐ Other

Name(s):
 Which ones?
 Name(s): Emerald Services; Safety Kleen
 Results:
 Who? Environmental Compliance & Remediation, Inc. (waste reduction & recycling)
 Who & what?
 Who & which agency?
 Explain:

HAZARDOUS SUBSTANCES USED (LBS)									
Product Name	Ingredients			2006	2007	2008	2009	2010	2011
Paint and solvent mixtures	CAS #	%							
	108-88-3	10		2,350	2,450	2,060	1,588	1,506	
	TOLUENE								
	1330-20-7	10							
	XYLENE ISOMERS								

HAZARDOUS WASTES GENERATED						
Waste (LBS)	2006	2007	2008	2009	2010	2011
Waste paint / thinners	155	242	991	741	390	

TREATMENT, RECYCLING, RELEASES OR OTHER RESOURCES USED						
Resource or Release (LBS)	2006	2007	2008	2009	2010	2011
Off-site recycling of paint waste thinners	155	242	131	741	390	

Opportunity Ship paint waste to off-site recycling facility

Describe the opportunity: Select vendor with capabilities to recycle waste paints and solvents not constituting of fuels burning or recovery. Continue promoting solvent conservation practices by employees via repetitive training, postings, and improved waste paint collection and storage availability.

Targeted Hazardous Products/Wastes: Paint waste/thinners

Observations:

Year	Observations
2007	Paint and related solvents for cleaning are used sparingly and found most effective for the specific application. No new products have been identified that are superior substitutions and conservation seems to be the best form of reduction.
2008	Substitution found for spray paint with soy-based or less toxic inks and dyes.
2009	Continue to identify substitutes for some paint/thinner products. Also making a conscientious effort to utilize paints and solvents only when necessary.
2010	Continue to identify substitutes for some paint/thinner products. Also making a conscientious effort to utilize paints and solvents only when necessary. Also minimizing inventories on hand and disposing of unwanted paints and solvents.
2011	

What are the estimated annual environmental effects of this opportunity? [Help](#)

Hazardous Substance Use Reduction (lbs) 82	Wastewater Reduction (gal) 0
Hazardous Waste Reduction (lbs) 351	Energy Conservation (kWh) 0
Recycling of Hazardous Waste (lbs) 390	Cost Savings (\$) 0
Treatment of Hazardous Waste (lbs) 0	Air Emissions Reduction (lbs) 0
Solid Waste Reduction (lbs) 0	CO2 Emissions Reduction (lbs) 0

Other Effects

Feasibility: [Help](#)

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: [Help](#)

- ☒ Selected for implementation. When? Continuation from 2003
☐ Scheduled for further study. When will the study be complete?
☐ Rejected. Why?

What problems will there be implementing this? Maintaining cost-effective means through off-site recycler to accept and provide reliable pick-ups of small amounts of recyclable paints and solvents.

Opportunity: Continuing employee training to conserve use of solvents

Describe the opportunity: Reinforcement of smart hazardous material handling and usage (thinners and paints) by way of continued employee training and safety briefings to promote further conservation and waste minimization efforts.

Targeted Hazardous Products/Wastes: Waste solvents

Observations:

Year	Observations
2007	
2008	
2009	Shop foreman and environmental staff increase awareness of ongoing safety, conservation, and waste minimization efforts via scheduled training and safety briefing opportunities.
2010	Continue 2009 awareness efforts by shop foreman and environmental staff and continue to minimize inventories on hand as well as dispose unwanted paints and solvents
2011	

What are the estimated annual environmental effects of this opportunity? [Help](#)

Hazardous Substance Use Reduction (lbs)	Wastewater Reduction (gal)
Hazardous Waste Reduction (lbs)	Energy Conservation (kWh)
Recycling of Hazardous Waste (lbs)	Cost Savings (\$)
Treatment of Hazardous Waste (lbs)	Air Emissions Reduction (lbs)
Solid Waste Reduction (lbs)	CO2 Emissions Reduction (lbs)
Other Effects	

Feasibility: [Help](#)

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: [Help](#)

- ☒ Selected for implementation. When? Continuation from 2009
☐ Scheduled for further study. When will the study be complete?

☐ Rejected. Why?

What problems will there be implementing this? How to recognize significant reductions and quantify those efforts. Will likely measure by way of the previously-identified opportunity (Ship paint waste to off-site recycling facility).

Opportunity Incorporate the use of less toxic or biodegradable paints and dyes

Describe the opportunity: Evaluating product substitution possibilities to enable and implement the usage of less toxic or biodegradeable paints and dyes.

Targeted Hazardous Products/Wastes: Waste paint

Observations:

Year Observations

2007

2008

2009 Starting to implement the use of less toxic/biodegradeable paints and dyes in the shops where feasible. Product vendors are providing some assistance with this opportunity.

2010 Continue 2009 efforts as well as continue to minimize inventories on hand and disposing of unwanted paints and solvents.

2011

What are the estimated annual environmental effects of this opportunity? Help

Hazardous Substance Use Reduction (lbs)

Wastewater Reduction (gal)

Hazardous Waste Reduction (lbs)

Energy Conservation (kWh)

Recycling of Hazardous Waste (lbs)

Cost Savings (\$)

Treatment of Hazardous Waste (lbs)

Air Emissions Reduction (lbs)

Solid Waste Reduction (lbs)

CO2 Emissions Reduction (lbs)

Other Effects

Feasibility: Help

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: Help

☒ Selected for implementation. When? Continuation from 2009

☐ Scheduled for further study. When will the study be complete?

☐ Rejected. Why?

What problems will there be implementing this? Resistance to change from using tried-and-true paints and dyes.

Process

Passivating Process

DESCRIPTION: Stainless steel pipes and parts are dipped into a 10% nitric acid and 1-3% ammonium bifluoride solution for cleaning and passivation prior to being shipped.

RESEARCH:

☐ Magazines/journals

☐ Conferences

☒ Vendors

☐ Internet searches

Name(s):

Which ones?

Name(s): Clean Harbors Environmental Services

Results:

- ☒ Industry sources
☒ Employee suggestions
☐ Government staff
☐ Other

Who? Environmental Compliance & Remediation, Inc.
 Who & what? James Brown, Operations Manager based on industry experience.
 Who & which agency?
 Explain:

HAZARDOUS SUBSTANCES USED (LBS)									
Product Name	Ingredients			2006	2007	2008	2009	2010	2011
Nitric Acid	CAS #	%		6,000	1,500	1,000	1,800	7,200	
	7697-37-2	67							
	NITRIC ACID								
Hydrofluoric Acid	CAS #	%		200	50	<50	<50	<50	
	7664-39-3	49							
	HYDROGEN FLUORIDE								

HAZARDOUS WASTES GENERATED						
Waste (LBS)	2006	2007	2008	2009	2010	2011
Nitric Acid Mixture	34,589	0	0	0	0	
Tank Bottom Sludge	5,280	0	0	0	0	
Tank Bottom Treatment Sludge	16,984	12,487	13,423	7,102	9,423	

TREATMENT, RECYCLING, RELEASES OR OTHER RESOURCES USED						
Resource or Release (LBS)	2006	2007	2008	2009	2010	2011
Off-site recovery or reclamation for reuse	0	0	0	7,102	9,423	

Opportunity Application of spray rinse and vapor controls to reduce evaporation and nitric acid use

Describe the opportunity: Continuation of waste overspray and evaporation controls and spillage by use of covers and drip collection devices

Targeted Hazardous Products/Wastes: Nitric acid solutions

Observations:

Year	Observations
2007	Hazardous waste treatment prior to discharge has seen significant reduction in discharge volumes due to reduction in overspray.
2008	Marginal increase in generation due to passivation area decontamination activities in 2008.
2009	Significant decrease in treatment sludge generation. Used more nitric acid to recharge acid dip tank. Will likely discharge entire contents of nitric acid dip tank in 2010 and fully recharge with fresh chemical solutions.
2010	Nitric acid dip tank was not emptied and fully recharged in 2010. Therefore, used more nitric acid to recharge tank to operational strength required. This correlates to a 32% increase in treatment sludge generation.
2011	

What are the estimated annual environmental effects of this opportunity? [Help](#)

Hazardous Substance Use Reduction (lbs)	5,400	Wastewater Reduction (gal)	
Hazardous Waste Reduction (lbs)	-2,321	Energy Conservation (kWh)	
Recycling of Hazardous Waste (lbs)	0	Cost Savings (\$)	
Treatment of Hazardous Waste (lbs)	9,423	Air Emissions Reduction (lbs)	
Solid Waste Reduction (lbs)		CO2 Emissions Reduction (lbs)	
Other Effects			

Feasibility: [Help](#)

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: Help

- ☒ Selected for implementation. When? Continuing since 2003
☐ Scheduled for further study. When will the study be complete?
☐ Rejected. Why?

What problems will there be implementing this?

Process	Materials accounting/mgmt
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DESCRIPTION: Unscheduled accumulations of lab wastes and miscellaneous regulated materials.

RESEARCH:

- | | |
|---|--|
| <input type="checkbox"/> Magazines/journals | Name(s): |
| <input type="checkbox"/> Conferences | Which ones? |
| <input checked="" type="checkbox"/> Vendors | Name(s): Clean Harbors Environmental Services, Burlington Environmental, LLC |
| <input type="checkbox"/> Internet searches | Results: |
| <input type="checkbox"/> Industry sources | Who? |
| <input type="checkbox"/> Employee suggestions | Who & what? |
| <input type="checkbox"/> Government staff | Who & which agency? |
| <input type="checkbox"/> Other | Explain: |

HAZARDOUS SUBSTANCES USED (LBS)									
Product Name	Ingredients			2006	2007	2008	2009	2010	2011
	CAS #	%							
		0							

HAZARDOUS WASTES GENERATED						
Waste (LBS)	2006	2007	2008	2009	2010	2011
PCB Ballasts	2,000	0	0	0	0	
Cleaning Compounds Chlorinated Solvents	0	0	468	0	0	
Lab Packs and Non Paint Aerosol Spray Cans	5	7	15	0	5	
Waste Combustible Liquid, Diesel	0	0	0	1,150	0	
Saw Coolant Waste	0	0	0	468	292	
Oil, Diesel, Water Mixture	0	0	0	255	0	
Grease with metal grindings	0	0	0	7	0	
Waste Corrosive Liquid, Acidic, Inorganic, Toxic Labpacks	0	0	0	5	71	
Latex Paint, Off-Spec, Expired & Loosepack Paint-Related Material					675	
Aerosols Consolidation					30	
Alkaline Parts Washing Detergent					209	

TREATMENT, RECYCLING, RELEASES OR OTHER RESOURCES USED						
Resource or Release (LBS)	2006	2007	2008	2009	2010	2011
Used: Various (cleaning compounds)			468	0		
Off-site incineration/thermal destruction of Waste Combustible Liquid, Diesel	0	0	0	1,150		
Fuel blending prior to off-site energy recovery of Saw coolant waste and Oil, Diesel, Water Mixture	0	0	0	723	292	
Stored, bulked, and transferred with no treatment or recovery, fuel blending, or disposal at receiving site					990	

Opportunity Product tracking and accounting

Describe the opportunity: Identification of smaller waste generation sources and quantifying collection of smaller waste quantities for treatment, consolidation, or waste disposal.

Targeted Hazardous Products/Wastes: Non-production waste and small chemical usage

Observations:

Year	Observations
2007	Purchasing and ordering less hazardous materials in aerosol form as well as substituting less toxic materials for more hazardous ones.
2008	Began tracking of miscellaneous waste material generation.
2009	Continue to track miscellaneous waste generation. Identifying waste minimization measures for smaller wastestreams as well.
2010	Continue to track miscellaneous waste generation. Identifying waste minimization measures for smaller wastestreams as well. Disposing of materials that are expired, excess, or no longer used.
2011	

What are the estimated annual environmental effects of this opportunity? Help

Hazardous Substance Use Reduction (lbs) 0	Wastewater Reduction (gal) 0
Hazardous Waste Reduction (lbs) 603	Energy Conservation (kWh) 0
Recycling of Hazardous Waste (lbs) 0	Cost Savings (\$) 0
Treatment of Hazardous Waste (lbs) 1,282	Air Emissions Reduction (lbs) 0
Solid Waste Reduction (lbs) 0	CO2 Emissions Reduction (lbs) 0

Other Effects: Materials processed data should be easier measure and quantify reporting and accounting purposes.

Feasibility: Help

Is this opportunity technically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Will environmental or health risks be reduced and not shifted? ☒ Yes ☐ No. If no, explain any shifting of risks:

Is this opportunity economically feasible? ☒ Yes ☐ Needs Further Study ☐ No. If no, explain why:

Implementation schedule: Help

- ☒ Selected for implementation. When? Continuation from 2002
☐ Scheduled for further study. When will the study be complete?
☐ Rejected. Why?

What problems will there be implementing this? Will be hiring an outside environmental consultant to assist in tracking waste generation costs from various sources.

For Official Use Only:

P3ID:

Base Year: 2006